



Designation: D3013 – 13 (Reapproved 2021)

Standard Specification for Epoxy Molding Compounds¹

This standard is issued under the fixed designation D3013; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers requirements for epoxy thermosetting molding compounds. It provides for their identification, quality control, and purchase in such a manner that the purchaser and the seller can agree on the substantial similarity of different commercial lots or shipments.

1.2 The compounds covered under this specification consist of mixtures or blends of epoxy resins and curing agents intimately combined, in an unreacted or partially reacted condition, with fillers, reinforcements, colorants, and other chemical agents.

1.3 The values stated in SI units are to be regarded as the standard.

NOTE 1—The properties included in this specification are those required to identify the kinds of molding compounds covered. There may be other requirements necessary to define particular characteristics. These will be added to the specification as their inclusion becomes generally desirable and the necessary test data and methods become available.

NOTE 2—There is no known ISO equivalent to this standard.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies

D150 Test Methods for AC Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulation

D256 Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics

D570 Test Method for Water Absorption of Plastics

D618 Practice for Conditioning Plastics for Testing

D638 Test Method for Tensile Properties of Plastics

D648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position

D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

D883 Terminology Relating to Plastics

D1896 Practice for Transfer Molding Test Specimens of Thermosetting Compounds

D2863 Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)

D3892 Practice for Packaging/Packing of Plastics

2.2 *IEC Standards:*

IEC 61621 Dry Solid Insulating Materials—Resistance Test to High-Voltage, Low-Current Arc Discharges³

3. Terminology

3.1 *Definitions*—Definitions of terms used in this specification are in accordance with Terminology **D883**.

4. Classification

4.1 *Grades*—This specification is subdivided into various grades of epoxy molding compounds based on physical properties. This specification provides for a system of characterization and identification which enables coverage for all commercially available grades having properties within the range of the possible combinations as may be selected from **Table 1**. A grade is designated by the cell numbers for each property in the order in which they are listed in **Table 1**. When a property is not specified, a “0” is entered as the cell number.

4.2 *Classes*—Each of the grades of epoxy molding compound may be further subdivided into classes according to special requirements. A class is designated by a capital letter

¹ This specification is under the jurisdiction of ASTM Committee **D20** on Plastics and is the direct responsibility of Subcommittee **D20.16** on Thermosetting Materials.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

***A Summary of Changes section appears at the end of this standard**